

Amendments to the Claims

This listing of claims will replace the originally filed claims in the application.

Listing of Claims:

Claims 1 – 30 (cancelled)

Claim 31 (new): A method for treating gases, comprising impurities, in which the gas at substantially atmospheric pressure is subjected to a radiofrequency inductively coupled plasma discharge.

Claim 32 (new): The method of claim 31, the coupling to the discharge being of the transverse electric (TE) inductively coupled or H type.

Claim 33 (new): The method of claim 31, the coupling to the discharge being of the transverse magnetic or E type.

Claim 34 (new): The method of claim 31, the discharge being of the mixed E-H type.

Claim 35 (new): The method of claim 31, the discharge being produced at a frequency between about 50 kHz and about 200 MHz.

Claim 36 (new): The method of claim 31, the discharge taking place in a tube with an inside diameter of between about 5 mm or about 10 mm and about 50 mm or about 150 mm.

Claim 37 (new): The method of claim 31, the discharge using a silica glass torch.

Claim 38 (new): The method of claim 37, the torch having a double wall with circulation of a cooling liquid between the two walls.

Claim 39 (new): The method of claim 37, the power of the torch being between about 1 and about 1000 kW.

Claim 40 (new): The method of claim 31, the discharge using a refractory torch.

Claim 41 (new): The method of claim 40, the torch being a ceramic or alumina torch.

Claim 42 (new): The method of claim 31, the discharge using a metal torch.

Claim 43 (new): The method of claim 31, the treated gas being a rare gas containing a perfluorinated (PFC) or hydrocarbon or hydrofluorocarbon (HFC) gas.

Claim 44 (new): The method of claim 43, the discharge comprising at least one temperature zone above about 5000 K.

Claim 45 (new): The method of claim 43, in which oxygen and/or water is also added.

Claim 46 (new): The method of claim 31, the throughput of treated gas being between about 0.2 and about 25 m³/h.

Claim 47 (new): The method of claim 31, the treated gas comprising gaseous effluents issuing from a method for producing or growing or etching or cleaning or treating semiconductors or semiconducting or conducting or dielectric thin layers or substrates.

Claim 48 (new): The method of claim 31, the treated gas comprising gaseous effluents issuing from a method for producing or growing or etching or cleaning or treating silicon thin layers.

Claim 49 (new): The method of claim 31, the treated gas comprising gaseous effluents issuing from a method for producing display screens.

Claim 50 (new): A system for treating gases by plasma, comprising means for producing a gas to be treated at a pressure substantially equal to atmospheric pressure and means for producing a radiofrequency plasma.

Claim 51 (new): The system of claim 50, the means for producing a radiofrequency plasma comprising a tube with an inside diameter of between about 5 mm or about 10 mm and about 50 mm or about 150 mm.

Claim 52 (new): The system of claim 51, the means for producing a radiofrequency plasma comprising a silica or refractory torch or a metal torch.

Claim 53 (new): The system of claim 50, further comprising means for cooling the means for producing a radiofrequency plasma.

Claim 54 (new): The system of claim 50, the means for producing a radiofrequency plasma comprising means for generating a current at a frequency of between about 50 kHz and about 200 MHz.

Claim 55 (new): The system of claim 50, the means for producing a gas to be treated at a pressure substantially equal to atmospheric pressure comprising pumping means of which the outlet is at a pressure substantially equal to atmospheric pressure.

Claim 56 (new): The system of claim 50, comprising a reactive element (70) for reacting the compounds resulting from the plasma treatment (68) for their destruction.

Claim 57 (new): A reactor device comprising a reaction chamber (62), producing at least one perfluorinated (PFC) or hydrofluorocarbon (HFC) gas, and further comprising a system for treating perfluorinated (PFC) gas or hydrofluorocarbon (HFC) gas of claim 50.

Claim 58 (new): The device of claim 57, the reaction chamber (62) forming part of a unit for producing or growing or etching or cleaning or treating flat screens or semiconducting devices or thin layers or semiconducting or conducting or dielectric thin layers or substrates, or being a reactor for shrinking photosensitive resins used for microcircuit lithography, or a reactor for depositing thin layers during plasma cleaning.

Claim 59 (new): A unit for producing or growing or etching or cleaning or treating flat screens or semiconductors or semiconducting devices or semiconducting thin layers or substrates, comprising:

- a) a reactor (62), for producing or growing or etching or cleaning or treating flat screens or semiconductors or semiconducting devices or thin layers or semiconducting or conducting or dielectric thin layers or substrates, or a reactor for shrinking photosensitive resins used for microcircuit lithography, or a reactor for depositing thin layers during plasma cleaning,
- b) first means (64) for pumping the reactor atmosphere,
- c) a treatment system of claim 50.